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MONTHLY REVIEW

Published by the

American Electro-Platers Society

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A SOCIETY FOR THE ADVANCEMENT
OF THE
SCIENCE OF ELECTRO-PLATING

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Courage is a great moral quality; not the common courage of dash and excitement, but the courage of a long-sustained effort. In the matter of living and carrying on its duties through sunshine or storm, through success or failure, courage is only another name for faithfulness.—Hugh Black.

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American Electro-Platers' Society

Editors' Office, 4156 Botanical Ave., St. Louis, Mo.

Vol. 7 JANUARY No. 1

RESEARCH WORK IN ELECTRO-PLATING.

Ever since the organization came into being the members of the American Electro-Platers' Society have realized that to progress as we should it was necessary that they obtain a more complete and accurate knowledge of the science of electro-plating. That not only we who gain our livelihood by it and are naturally supposed to know all about it, but also the manufacturer who utilizes its processes and the chemist who analyzes and checks our solution have not arrived as yet at the solution of many of the problems that arise in the practice, methods and processes used. With a constantly widening field for its usefulness and an increased demand for its application in industry, a greater range for its utilization becomes apparent. To meet this efficiently and economically we must evolve new processes, invent new and better equipment, improve our practice, better the quality and reduce the cost of production in our varied lines of work. This opens up a wide field for investigation. The American Electro-Platers' Society appreciating this and realizing its value not only to the electro-platers, but especially to the metal industry as a whole, has been studying ways and means to carry on research work in electro-plating. To do this properly, efficiently and at the lowest possible cost and to make the results available to all interested was the problem. It is evident that the Society cannot carry the whole cost such a program would entail, as it will take several years to carry out the investigations and check the results of even a modest program of research work. We believe that there are a sufficient number of manufacturers who utilize this "key industry" and who are interested in the betterment of the science of electro-plating who are willing to contribute to a fund for this purpose if the matter is brought to their attention. Theirs is the ultimate benefit.

A means of carrying on research work in electro-plating is open to the society through an arrangement with the U. S. Bureau of Standards whereby if the American Electro-Platers' Society can raise a fund of $10,000 per year for three years to employ the necessary help the Bureau will provide the equipment, space and supervision for carrying on the work, will collect the data, tabulate the results, and make them available as common property to all interested. It is proposed to secure one

hundred or more manufacturers who will pledge themselves to pay $100 per year for three years to finance the project. We are sure it can be done. This plan has the approval of Dr. Stratton, Director of the Bureau of Standards and of Dr. Blum, head of the Chemical Research Division. His work in electro-plating research and his great interest in the society is well known to all the members. To put this plan in operation the various branch secretaries are requested to immediately secure the names of industrial plants having plating departments in their respective localities and forward their names to Dr. Wm. Blum, Bureau of Standards, Washington, D. C., who will send out a letter to them outlining the plan and requesting their co-operation. Greater results and interest will be secured if the members will take the question up personally with the factory management in their respective plants and lay the benefit of the proposed plan before them. This is a big thing for the A. E. S. Let us all pull together "for the advancement of the science of electroplating."

WALTER FRAINE,
Chairman Research and Publicity Committee.

S.S. DENIS

Liverpool-New York, September, 1919.

Steaming, steaming for sixteen days
Over the Ocean wide,
Steadily, surely, day after day
Nearing the other side.

Cautiously, through the dangerous fog
Loudly proclaiming her way,
Steaming along on a rolling sea,
Honestly trying each day.

Slowly, surely the Denis kept on
From port to port, without rest,
Through rain or sun, fair weather or foul,
Every day doing her best.

God in Heaven, give such strength to us all
In the daily life we lead,
To be steady, tireless, brave and true,
For then we must surely succeed.

H. J. RICHARDS.

The above poem, written by our own Hedley, on his return voyage reveals that in contrast with his humorous poetic stunts, that he sometimes reflects upon the substantial things of life.—Editor.

GET TOGETHER.

By H. J. Richards.

1920 has now become an established fact.

We have settled down to a year's work.

No longer the date on our letters show signs of having been altered from 19 to 20.

Our supply of daylight is growing, but our coal pile is shriveling. The fields have not yet turned green, but the Christmas jewelry has.

The year has not developed any newness.

In fact there seems a sameness.

The supply salesman is more gloomy than ever, when he tells us what the price of buffs will be next September. These chaps are as cheerful as an insurance man, who dwells gloatingly on how much money your insurance will bring to your wife, after you have been dead ten years.

The New Year's crop of good resolutions are hanging on surprisingly, helped out considerably by John Barleycorn's debarment and interment. Old Crow has flown, Johnny Walker has walked, and the Green River is dry.

The league of nations has started leaguing.

Plow shares are not yet being made of swords, but eight-inch shells have been made into stove linings.

Second lieutenants have resumed their normal size hats and gone to work.

A glorious year is with us. A get together year. Throw away your hammer for reconstruction is in the air. Bring along the cement of kindness, tolerance and service to others. Nothing is ever settled finally, unless it is settled rightly. Nothing is ever settled rightly unless in the settlement the rights of others are considered as being equal to our own. The doctrine of selfishness; the practice of self gratification, without any regard for the rights of others; the satisfaction of desires to an extent limited only by a man's powers and opportunities. These doctrines and practices are the sole and only cause of all misery, crime, wretchedness, discontent and want.

Do not believe that human nature cannot be changed. Thousands have been changed and are changed daily. From a standpoint of money alone, the implanting in the minds of every boy and girl of the doctrine of unselfishness, is by far the most profitable investment in the world today.

The teaching of the great incontrovertible fact that true happiness is only to be found in a proper consideration of the rights of others, is by far the most valuable teaching that can be taught, and is the only means which carries any promise of a solution of the world's unrest, industrial or otherwise.

Be not weary in well doing.

Let us get together.

MECHANICAL CLEANING PROBLEMS.

By C. S. Tompkins, Detroit Branch.

It is not my intention in this paper to deal particularly with the chemical end of cleaning problems, but to go more into detail regarding the mechanical, and perhaps to go into detail in factory cleaning to a greater extent than into the cleaning such as is done in plating rooms, and to arouse the plater to the possibilities of enlarging his area of control in the factory so that in the future the electro-plating engineer will not only have charge of the little corner called the plating room, but will also have charge of all the tanks where cleaning of metal is done. We little realize until we get into the factory proper the amount of cleaning that is done, and we are amazed also at the crude method used to remove greases and oils. I say "crude" because the methods in the majority of instances today are very crude. For instance, here is a tank which contains a solution of some alkali which is used for removing grease. The method of heating, we say, is by exhaust steam and the highest heat obtainable is around 160 to 180 degrees. They put the metal in this solution and sometimes remove it, thinking it is clean when it is not even washed. By that I mean the dirt is not removed. What would we think if a housekeeper after a meal should put her dishes into a pan with a soap solution and set them on a stove, getting them at the heat aforesaid, and in that manner endeavor to remove the grease? But she does different. She obtains a boiling solution and uses a dishcloth, which is in other words nothing more or less than agitation, and in this manner removes the grease quickly and thoroughly. If a mechanic whose hands become smeared with grease, oil and dirt wishes to remove the same, he does not use a common soap but selects a hand cleaner which contains besides the chemical an abrasive so that he gets both chemical and mechanical action the same as the housewife does in the previous illustration.

And it is on this point of agitation that I wish to impress the fact of advanced cleaning. There are, of course, on the market today several mechanical washers, some using a splash system and others a spray system, which are very successful and which are besides doing the work quickly and efficiently, and does away with handling by having a traveling carrier upon which the work is placed so that two operators are all that are necessary to control the work.

Not only does agitation produce better results in less time, but it decreases the amount of alkali used and prolongs its life as its duties are not as strenuous, owing to the added mechanical action. I have here two pieces of apparatus with which I will later show other methods of agitation to prove these points which I have been trying to impress upon you. There are many other methods which will in the future be discovered, which will be of great value in this line of work.

When I say that a solution in an open tank without agitation must contain, on a certain class of work, from 6 to 8 ounces of almost any cleaner and that this can be reduced to one or two ounces per gallon with agitation, you will see the great economy in the amount of material used to say nothing of the greatly increased production. Of course there is a great deal of difference in the nature of the grease or oil to be removed, whether it be mineral, animal or vegetable, and this is one point which has escaped a good many of those who have charge of this work. For instance, in metal stampings the oil is applied to the steel before going to the press for the purpose of lubrication to do away with the friction of the press; this increases the wearing qualities of the dies, and when this oil is applied their thought is only of lubrication and no thought is given to the fact that before this article reaches the consumer it has to pass through the finishing department where this oil has to be removed. On the other hand, the finishing department receives this article and has the single thought that here it is and we must get it clean. The thought I am trying to bring out is this: If, for instance, an electro-plating engineer was in charge of this cleaning department, he would take up with the superintendent or the proper party and endeavor to have an oil used which would be soluble and which would not enhance the wearing qualities of the dies, but on the other hand would improve that quality and he would be able to remove the oil in much less time and at much less cost, which would also give a cleaner article and decrease the trouble in the endeavor to get an adherent finishing coat before it leaves his hands. I have heard many superintendents who claimed that an alkali solution could be made which would be a preventative of rust. This can be done, but not with a straight alkali solution. We have been conducting experiments along this line and find that this formula has been successful as a temporary prevention of rust. A boiling solution of 24 gallons of water with 3 to 4 pounds of a neutral alkali and from three to six gallons of a soluable oil will do the trick. I say three to six gallons and will explain that the longer the article is to be exposed why the more soluable oil should be used. There are some very difficult greases and oils to remove and in some instances you will find them to be of a sticky adherent nature, such as the oils used for lubricating valves. Personally I think a soap solution in which the work is soaking momentarily before going to the straight alkali will add greatly to the efficiency in this work. Another point is in the matter of changing solutions. A good many tanks are run from four to eight weeks and sometimes much longer without changing. Personally I do not believe this is economical from the standpoint of the material used, or from the standpoint of production. I believe that a solution, no matter of what it is made, should be changed at least once a week, and if the volume of work is large, should be changed more often. I have seen this tried from

both points of view and in every instance have found the economy was in the use of a clean solution.

I will not attempt to tell any of you regarding the use of electric current in a cleaning solution as most of you have probably forgotten more than I have ever known about it. I do maintain, however, that every electric cleaning solution should be equipped with a double throw switch and also that the steam pipes leading to the coil should have insulating joints. I have personally known instances where an alkali was blamed for the rotting out of the steel in the tanks and coils when the true facts of the case were that the steam pipe leading into the tank was charged from grounded shop current wires which produced an electrolysis, and thereby the disintegrating of the steel. It also effected the low voltage of the dynamo which was used to furnish current for the tank.

My idea, as before stated, is to arouse the electro-plater so that he will go through his plant and he will be surprised to find the number of cleaning tanks distributed throughout the factory, and to study these problems and assert himself to the superintendent or the production manager and show them the possibilities of having these cleaning operations under his, the plater's, personal supervision, which will give him more responsibility and greater field for endeavor and which will, of course, result in a higher salary, and that is, of course, what we are all most interested in.

There are so many angles to the cleaning problem that it is impossible to go into them all. For instance, the preparation of metal for enamel and the removing of enamel, the cleaning of grease, the cleaning of cylinder blocks, and many other articles, which are too numerous to mention, would take up not only a whole evening but a number of evenings if one went into detail. I would be glad personally to discuss any individual problem which might be presented to you at any time, and if any of you have received a new idea from what little I have said, I will feel amply repaid for any effort I have made.

THE ENGLISHMAN CAME BACK.

All who have visited Epsom have seen the big gates on which are perched two stone dogs. An American officer saw them recently for the first time.

He approached a native with a joke on his lips, expecting to see it fall flat, as he believed would be the case. "When do you feed these dogs?" he asked.

"Every time they bark," said the Epsomite and now this particular officer is more an admirer of Englishmen than ever.

REPORT OF EDUCATIONAL COMMITTEE OF CHICAGO BRANCH.

Discussions and Results—December Meeting, by George Burt.

Q. What per cent of acidity should a nickel solution have?

A. That depends considerably on the class of work you are doing. There is no percentage of acidity absolutely necessary in a good working nickel solution. Yet there are classes of work that you can not plate well and get a white coating, unless your solution shows acid. In other words, that it does contain some acid, say a weak boric acid. It may not necessarily show in an analysis. Where you have free sulphuric acid you may have trouble with it.

Q. What indicator is best to use for acid test, litmus or congo paper?

A. For free sulphuric acid congo paper is generally used. But with a nickel solution that contains so much free sulphuric acid that congo paper shows an indication is radically acid. Freshly prepared litmus paper is reliable. If kept standing around two or three months it is not so good an indicator. Litmus paper shows an acid reaction when solution is but slightly acid, if paper has been in an air-tight container.

Q. Is a simple or complex solution best for a durable deposit?

A. In the old days we had nothing but the complex solution of double sulphate of nickel and ammonia, and we could get good work with that. We are now getting better work with a combination solution, which is also complex. The old solution is the better under some conditions. The combination solution is better than single salts, but will not deposit as rapidly.

Dr. Blum tells us that a complex solution, that is one containing other metal ions than those of the metal to be deposited, is the best solution. The function of this common ion is to carry current and that there should also be sufficient ion concentration to supply metal as fast as needed.

Q. What causes a solution to become acid?

A. 1. Continuous use of a strong current. 2. Insoluble anodes. One of our members told of a case where a plater was using rolled nickel anodes with which he was well pleased because they lasted so long, he having had them three years with but little corrosion. It was explained to this man that the nickel deposited cost about 20% more than if it was taken from his anodes, besides having the trouble of constantly neutralizing his solution.

Nothing is so injurious as to play with high ideals and not put them to work. You get so after a while that you cannot put them to work.

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SPOTTING OUT ON BRASS.

(A paper read before the Pittsburgh Branch American Electro-Platers' Society, by Mr. Abraham Kantrowitz.)

As I have done considerable brass plating in the past, and have been very interested in the articles which I have read at frequent intervals concerning the cause of this annoying problem, which seems to be present almost every place where brass plating is being done. As to my experience, I have found that most of this trouble apparently seems to be caused by using too much carbonate of soda. This seems to be the chemical agent which frequently causes this trouble. I find that a great many platers add as much as three to four ounces of carbonate of soda to each gallon of solution, whereas I have found that by keeping the amount of carbonate of soda down, that this trouble will be almost, if not entirely eliminated. A great many platers use excessive amounts of carbonate of soda without knowing the real effect it produces.

In small quantities, carbonate of soda serves for a preparation of metallic carbonates, as a conductive agent, and for freeing objects from grease, while brass plating may be done very effectively without the use of soda at all.

If carbonate of soda is to be added to the solution, no particular advantage will be gained by its use, and if it is left out, the solution will be so much the better off. Carbonate of soda is a great destroyer of cyanide, while cyanide is a great reactor on the deposition of metals.

If too much cyanide is used in the bath it will resist all decomposition of metals and result in no deposit on the work that is being plated, and must be overcome by the addition of metal instead of soda. When this condition occurs in a slight form and the work does not seem to plate even, the operator is under the impression that his solution does not conduct properly, and proceeds to add what he believes to be conducting salts. The so-called conducting salts are not true agents. They may help the solution to conduct better, but to this effect they partly destroy the cyanide, hence, setting some of the metal free, which immediaely goes on the work while plating.

When all the freed metal has been taken out of the solution, you are in the same position as putting it in, and a little worse, because the cyanide has been degenerated into the condition that does not leave it powerful enough to hold the metals together in the solutions or dissolve metal from the anodes. The oxides which begin to form find their way towards the anodes, coating them over and making it more difficult than ever to even get any conductivity at all. The soda is the main cause of the anode coating over, as they actually kill the cyanide, which is the backbone of the solutions, leaving it powerless to dissolve metal from the anodes and keeping them free of all oxides.

The old-time platers advocated the use of different kinds of chemicals, etc., in certain solutions, and I believe the origin of this was due to the current force which was not understood as well in those days, and the solution had to suffer in consequence. As dynamos are constantly being improved and the experienced platers are giving more attention to the most important part, the current, all these extra additions in the solution will be virtually disposed of and the least amount of useless chemicals, etc., in the solutions will be their slogan.

I believe the following formula to be a good all-around brass plating solution: Water, 1 gallon; carbonate of copper, 3½ ounces; carbonate of zinc, 2 ounces; cyanide of sodium C. P., 10 ounces; aqua ammonia, 1 quart to each 50 gallons of solution.

NOTES.

Even the baby is doing it. Pittsburgh branch is to celebrate their first anniversary with a banquet, and taking it from their past record it will be a success.

New York branch has a banquet feature that appeals to the editor, that is the holding of a session previous to banquet for the reading and discussion of papers. Don't forget about that New York number.

Toledo branch has been heard from, also Cleveland branch has some news. We may now expect to hear from one or two others. Occasionally the members complain that the Review has no news concerning their branch, and our society at large is anxious to keep in touch with all, so Mr. Secretary, do your best.

Frequently we receive complaints from members who have not received their "Review." We can congratulate ourselves on our efficient postal system, and while we admit the usual exception to all rules, it is rule that unless the mail is accepted at address given the editor is immediately notified of change of address, or removed and address unknown, and then name is taken from mailing list until address is secured. If the mail is accepted at address given, there is only one other way, that is by personal notice. We are notified of majority of changes through postoffice.

The body that has ceased to overcome, to joy in triumph over ease, to leap and plunge and go, has settled down with the door open to every disease. The mind that shrinks from effort, that reads only what is spiced and pleasant, that does not love to tackle hard problems and sweat over enigmas, is moribund. The soul that no more struggles and suffers, that finds no more passions to wrestle with, no more discouragements to surmount, is already half lost.—From Dr. Crane.

SUCCESSFUL METHODS

Detroit Branch having commended the "Successful Method" page, we now feel justified in the continuance of it. It is not necessary that the suggestion be entirely new. You may not have been the originator of it, and yet it may have its value to another.

I have found the following to be a very good nickel strip: Dilute sulphuric acid to 50° Beaume and add 1 oz. glycerine per gallon; use lead anodes and reverse current. H. D.

So many formulas for nickel solution contain large proportions of nickel ammonium sulphate with an addition of small amount of nickel sulphate, in fact sometimes so small a quantity I failed to see the reason. Having been successful with the use of nickel sulphate solutions (using 16 oz. nickel sulphate, 4 oz. boric acid and 3 oz. sodium chloride per gallon solution) I made a change using 14 oz. nickel sulphate, 3 oz. nickel ammonium sulphate and 2 oz. boric acide per gallon of solution, this formula giving practically the same nickel content as the former, yet reducing the resistance somewhat. There has been claims made that the use of sodium chloride in a nickel solution causes corrosion of plated articles more readily. While I am not supporting that theory, the latter formula does not call for its use. We have a 500 gal. tank and from a practical standpoint the results are similar to other nickel sulphate solutions. Q. M.

ROCHESTER CONVENTION.

Convention committee have arranged with Hotel Seneca, Rochester's leading hotel, as place of holding convention on June 30th, July 1st, 2nd and 3rd.

The rates as scheduled are from $2.50 per day for one person to $7.00 for two persons, and offer a variety of accommodations to select from. We will publish complete list later.

Reservations for rooms are to be made direct to Hotel Seneca. Preliminary arrangements show that convenience and comfort of delegates, friends and ladies are being considered, even until 1 a. m. on July 4th.

A reporter in a camp where a number of negro troops were being discharged asked one of them what he was planning to do when he got his release.

"Boy," said the negro, "the fust thing after Ah gets mah discharge, Ah goes and busts mah second lieutenant on the nose."

"Oh, no yo' ain't, nigger," spoke up another, "yo is gwine to get in line and take yo' turn."

WHAT THE BRANCHES ARE DOING

Chicago.

Meets second Saturday of each month, 8 p. m., at the Briggs House, Randolph and Wells Sts. Secretary, C. E. Thornton, 948 Leclaire Ave., Chicago, Ill.

Our last regular meeting was held January 10th with a good attendance.

The banquet committee reported that the date for our annual banquet had been definitely decided upon as Saturday, February 21st. They also reported that everything was progressing nicely for the affair and they expected it to be the greatest ever.

The educational committee is working hard and is producing great results. The subject for this meeting was "Faraday's Law." This was described very thoroughly by the use of the blackboard by the committee.

The following questions were asked and discussed:

Question No. 1: How can liver of sulphur be kept from decomposing?

Answer: Keep in air-tight containers.

Question No. 2: What can be considered a good surface for black nickel, as for instance brass, copper, zinc or steel?

Answer: Zinc or zinc plated surface is the best for black nickel.

Question No. 3: What advantage has rochelle salts in a brass solution?

Answer: Rochelle salts has a tendency to keep the anodes clean, but is not practical to use in a brass solution.

Question No. 4: How would you overcome an excess of caustic soda in a brass solution?

Answer: By adding ammonium chloride. Then the caustic soda in solution will liberate ammonium gas and form sodium chloride and water thus breaking up the caustic soda according to the following formula: $NH_4+NaOH=NaCl+H_2O+NH_3$.

New York.

New York Branch of the American Electro-Platers' Society meets second and fourth Fridays of each month at 32 Union Square, New York City. Secretary, John Burke, 110 Glen St., Brooklyn, New York.

December meetings of N. Y. Branch of the American Electro-Platers' Society were well attended. President Sterling presided. One applicant was elected to active membership, two new applications were referred to the Board of Trustees. It has been decided that an afternoon session will be held preceding the banquet, February 21st, 1920, for the purpose of reading papers and discussions pertaining to electro-plating. The laboratory committee of New York branch will conduct this session. Papers will be prepared and read by members of New York branch only.

Pittsburgh.

Meets every first Saturday at 8 p. m. at United States Bureau of Mines Building, Forbes St. Secretary S. E. Hedden, 227 5th St., Aspinwall, Pa.

Meeting called to order by President John Corbit at 8:15 with ten members present. Mr. Isaac H. Levin, of the Electrolabs Company, 2635 Penn Avenue, Pittsburgh, Pa., was elected an associate member. After the regular business was taken care of the question of nickel plating aluminum was brought up, when Mr. Eggleston asked if any member had ever used the iron chloride dip, previous to placing article in nickel solution. One member stated that all of the trouble in plating aluminum was caused by starting with too high voltage which caused a deposit of hydrogen. This hydrogen would cause the plate to peel, and the plater would think that grease was the cause. He recommended the use of a week brass solution, high in zinc and low in free cyanide to be used as a strike before nickel plating. First clean the aluminum with whiting and water, rinse, then direct in brass strike, which will give a deposit of high lustre with a voltage of one half volt, rinse and place at once in nickel solution, and the nickel deposit will adhere perfectly. Another member stated that he had had excellent results by first cleaning the aluminum articles in hot soda solution then dipped in strong nitric acid, rinse and place in nickel solution, the deposit being perfect. Mr. Eggleston said to start the current at not more than one and a half volts.

Some time was taken up by the banquet committee, and it was finally decided to hold the banquet Saturday evening, April 17, 1920, in the Fort Pitt Hotel, this being the first birthday anniversary.

Baby Branch to Celebrate First Anniversary.

On April 17th, 1920, the Pittsburgh Branch of the American Electro-Platers' Society will be just one year old.

While this is the baby branch of this educational society from the standpoint of years, it is by no means the smallest.

The personnel of the membership of this branch is most representative of the plating craft. The rank and file of the membership are always intelligently active towards looking after the very best interests of their employers and toward excelling in the quality of the work apportioned under their supervision.

Realizing that the interchange of ideas lies in co-operation and mutual helpfulness, these hustlers take a zealous interest in fostering the aims and tenents of the society.

In order that those who should be interested in the American Electro-Platers' Society may have brought to their attention the merits of this organization, the Pittsburgh Branch have decided to observe their first anniversary on Saturday night, April

17th, 1920, by a banquet at the Fort Pitt Hotel. Further details will be announced later.

A committee of the truly active members who have been in close touch with the interests of this branch since its inception are in charge of the affair. They are as follows: Abraham Kantrowitz, General Chairman; S. E. Hedden, Secretary; Wilfred S. McKeon, Publicity; Charles H. Rothfuss, Menu; Henry A. Beck, Music, and John Corbit, Ex Officio.

St. Louis.

Meets third Saturday of each month at Barr Branch Library, corner Jefferson and Lafayette. Secretary, H. H. Williams, 4156 Botanical Ave., St. Louis, Mo.

The regular meeting in December was held on the 29th with a good attendance. One candidate was elected to membership, and a banquet committee appointed consisting of E. J. Musick, H. J. Richards, F. E. Terrio, F. Rushton and J. Humbrecht. It was decided to invite the ladies, due to suggestion of Mr. Rushton.

Mr. H. J. Richards exhibited samples of the work done in his hot copper strike solution.

At our January meeting held on the 17th the banquet committee reported having made arrangements for Saturday, March 6th, at the American Annex. The program will include a paper by H. J. Richards, who is capable of giving us something practical and at same time make it entertaining enough to even keep the ladies interested. It is planned as an extra inducement to the ladies as well as our members to have with us our Supreme President, Oscar E. Servis. There has also been a rumor that the sponsors of our branch, E. Lamoureux and F. J. Liscomb will address us. We hope so. Dancing will be indulged in after the program.

Mr. Chas. Beer, who was elected to active membership in our branch some time ago, but withdrew owing to necessity of changing climate, was at meeting and while he is now located in Denver, Col., requested he be granted an associate membership, which was done. He is now with the Colorado Shale and Metal Co., a concern that is developing the oil and mineral resources of that state, and having extensive laboratories are ready to go into some of the problems of the electro-plater, especially as to purity of metals, etc.

Providence-Attleboro.

Meets first and third Thursdays of each month at 26 Custom House Street, Room 16. Secretary, Albert J. Lemrise, 124 Waverly Street, Providence, R. I.

Cleveland.

The Cleveland Branch meets every second and last Saturday of the month at 1344 *East Prospect St. Secretary B. F. McCormick,* 1941 *West 77th St.*

At the last regular business meeting our secretary, Mr. W. D. Scott tendered his resignation. We certainly are very sorry to lose his services in that capacity for he was always a consistent worker and attendant at our meetings ever since the branch was organized. We could not prevail upon him to keep going until next election so the writer will have to plead guilty of being appointed secretary pro tem.

We received the application for membership of Mr. Philip Siebert, 4405 Irene ave., and reinstated Mr. B. F. McCormick. 1941 W. 77th St. I believe these matters should be first mentioned so the boys can get their Reviews without delay.

I will probably be able to send some news items after I get a little better acquainted with the job.

B. F. McCORMICK, Secy. Pro. Tem.

Milwaukee.

Meets first Friday of each month at West Side Bank Building. Secretary, A. W. Ruttan, 1105 *Twenty-eighth St., Milwaukee, Wis.*

The regular meeting of Milwaukee branch was held January 2nd. President Frank Marx presiding. An interesting lecture was given by one of our newly elected members on the method of manufacture of phonograph records, which I think will interest the members of other branches.

The original plate is taken on a wax composition, which is shaped like a disc, and one inch thick. This plate is then rubbed in with graphite and put into an acid copper bath for twenty-four hours, then removed from copper bath. The copper plated part is then separated from the wax, filled in on the back side with copper to stiffen same, and is then used as a die by being placed in a press with a pressure of about 240 pounds to the square inch. The record composition is placed on a steam table, which softens it, then placed in the press and the copper plated die makes the impression on the record.

There has been a question brought up at our meetings for the last three or four months. One of our members has a large steel cyanide copper tank which would plate copper on the sides of the steel tank. Care was taken that the anodes did not touch the tank, and wooden strips were placed across the top of tank so that the anode and cathode rods did not touch same. Rubber insulators were placed around rods where they came in contact with the wooden strips. The blocking which raised the tank from the floor was soaked in asphaltum, but still copper plated onto the tank. All of our members made suggestions which were tried without success. It was then suggested that porcelain insulators be used between the tank and rods which stopped the trouble at once. This is a simple cure for such troubles but had us guessing for a long time.

Rochester.

Meets on the fourth Fridays. Secretary, Sylvester Gartland. 128 Bryan Street, Rochester, N. Y.

Rochester Branch held a special meeting Saturday evening, January 10th, 1920, with President George Hesselink presiding.

A large attendance was out to hear the report of the arrangement committee.

The Hotel Seneca was selected to be the headquarters for holding the eighth annual convention.

The committee also reported that the annual banquet of Rochester branch will be held February 14th, 1920, at the Hotel Seneca. The ladies are going to co-operate with us and we are anticipating a very successful banquet.

A special invitation will be sent to the wives of our members to be present and participate in the good fellowship that is always shown at our banquet.

Rochester branch will meet every Saturday night at the Hotel Seneca. All visiting members are welcome.

Hoping to meet you in Rochester,

Detroit.

Meets first Friday in each month at Cass Technical High School, Platers' Classroom, 2nd Avenue and Beech Street, at 8 p. m. Secretary, E. G. Lovering, 562a Grand River Avenue, Detroit, Mich.

Regular meeting held January 5th with a large gathering of the class. Owing to the absence of our most worthy president, Mr. Fritz, who found it necessary to answer a hurry call across the river to Canada, the meeting was opened by Vice-President Kutzen, and to say that this young man is there would be putting it mildly. There is much latent ability lying dormant in the anatomy of this young man from Fords. Now we know who our next president is to be. The way he put the "pep" into the members at the various discussions caused Elmer Woodmansee to enthusiastically remark that it was the best meeting he has ever attended, and Elmer is a wrestler of knotty problems of no small reputation.

A general discussion on plating die cast metal brought forth many "modes of procedure."

Mr. Brockway told us how the Ford laboratories overcome the tin oxide by a combination zinc bath. Mr. Shepherd, one of our oldest members, gave us a preliminary dip of muriatic acid and lead acetate. Mr. Shepherd claims that all signs on his "ouija board" say that the next convention should be held in Flint. Mr. Shepherd, while in Detroit, had the pleasure of visiting the largest plating room in the world at the E. & J. Corporation. The spotlight was turned on Lovering's "Magic Fluid" for nickel solutions, and Mr. Phillips told of the excellent

results he is obtaining with the aid of "Magic Fluid." This will be interesting to the association in general, and Mr. Lovering expects to have a paper on the subject in the near future that will turn the combination cleaning and plating green with envy.

A most interesting paper and demonstration was read by Mr. C. S. Tompkins. What this boy don't know about cleaning isn't worth putting down in one's note-book. His paper and demonstration was on "Agitation," as applied to metal cleaning. The paper will be published in the Review, but the apparatus Mr. Tompkins used to demonstrate his pet theory, "Agitation," we will have photos taken and sent out to the various branches, as he sure has a great idea for cleaning tanks, and the members who were not at the meeting missed a treat.

Mr. Brockway suggested that the next meeting be entirely taken up on a general review of 1919 of solved and unsolved problems, each member to prepare a paper on problems he has met in his respective plating room, to see if we cannot bring out something for the page Editor Williams set aside, "Successful Methods," as we think the idea is good and Detroit branch wants to see it continued. So cheer up, Mr. Editor, Detroit branch may have something for you.

The last half of the term of our class in electro chemistry starts Monday, January 12.

Meeting adjourned until February 6th.

Newark.

Meets first, third and fifth Fridays of each month, 8 p. m., Foresters' Home, 20 Central Ave., Newark, N. J. Secretary, O. F. Carlson, 225 West Grand St., Rahway, N. J.

The last two meetings held on December 19 and January 2, on account of the holiday season were poorly attended, and consequently I have very little to report, but from now on we expect some very interesting meetings.

At the meeting held January 2, an application for active membership was received from Mr. Samuel Glickenhaus, 72 Monmouth St., Newark, N. J.

A committee consisting of Conrad Frey and Horace H. Smith, was appointed to secure data on our coming banquet.

At our next meeting the matter of the banquet will be taken up in earnest, and likely the committee will be appointed, and it is hoped that every member of Newark Branch will give this committee their fullest co-operation, so as to make this year's banquet even a greater success than last year's, and I am sure we can accomplish this if every member will do his "bit."

Syracuse.

Meets second and fourth Fridays of each month at Y. M. C. A. Building, at 8 p. m. Secretary, Philip J. Murray, 318 Leavenworth Ave., Syracuse, N. Y.

Grand Rapids.

Meets on the second Wednesday of the month at The Morton House Secretary, Alex. Rickson, 1350 *Turner Avenue, Grand Rapids, Mich.*

Our regular meeting was held on January 14th, with 18 members present. The meeting was indeed interesting and all were enthusiastic when the subject of banquet was considered. A motion by Mr. Allen that a committee be appointed to arrange for same carried. Later the committee reported they decided to hold a "stag." Date to be announced later.

Mr. Van Doff sent in his resignation as a member, which was accepted.

Mr. Miller has resigned his position with the Wolverine Brass Co., and has accepted a position as salesman. He has been succeeded at the former place by R. J. McWeekin, who has filled an application for membership in this branch.

Mr. Allen, our librarian, in absence of questions on plating subjects, gave a brief address on "Why an electro-plater foreman seldom becomes a superintendent." This gives all something to think about.

Toledo.

Toledo Branch meets 1*st Tuesday night each month at Toledo University Science Building, Electro-Platers' Room, corner Cherry and Page Sts. H. L. Myers,* 410 *Palmer St., Secretary.*

Toledo Branch held it first regular meeting of the New Year with President Whitaker presiding on Tuesday, January 6th. The evening was spent in discussing a method of getting the members to attend meetings more regularly. It was finally decided that for a small branch we were trying to meet too often; that once each month was enough. We then decided to meet on the first Tuesday of each month. However there are keys to the building and to the electro-platers' room where we can experiment at any time, keep sort of an open house for members at all times.

APPLICATIONS FOR MEMBERSHIP.

New York.

Geo. A. Wilson (active).....439 W. 22nd St., New York City.

Newark.

Samuel Glickenhaus.....70 Monmouth St., Newark, N. J.

Pittsburgh.

Chas. Smith (active).....Edenvale St., N. S., Pittsburgh, Pa.

Cleveland.

Philip Siebert.....4405 Irene Ave., Cleveland, O.

Chicago.

R. C. Schaefer.....554 E. 92nd St., Chicago, Ill.

Correction from December.

Joseph Corbit (Sr.).....513 Euclid Ave., Los Angeles, Cal.

ELECTED TO MEMBERSHIP.

Pittsburgh.

Isaac H. Levin (associate).....2635 Penn Ave., Pittsburgh, Pa.

St. Louis.

Wm. J. Flannery (active).....1934 Lami St., St. Louis, Mo.
Chas. Beer (associate).....2313 Emerson St., Denver, Colo.

Rochester.

John J. Desmond (associate)..Hotel Richford, Rochester, N. Y.

Chicago.

E. V. Allen.....Auditorium Hotel, North Chicago, Ill.

REINSTATED.

B. F. McCormick (active).....1941 W. 77th St., Cleveland, O.

TRANSFERRED.

Wm. Kemp.....From Milwaukee branch to Chicago branch
Wm. P. Manning..From Syracuse branch to New York branch

ELEVENTH ANNUAL BANQUET

New York Branch

AMERICAN ELECTRO-PLATERS' SOCIETY

The eleventh Annual Banquet of this branch will be held February 21st, 1920, at the Broadway Central Hotel, Broadway near 4th Street, New York City, at 7:30 p. m. sharp.

Manufacturers are cordially invited to attend this Annual Banquet, together with their managers, superintendents, chemists and platers.

An especially attractive program has been prepared for this occasion. Interesting speakers will deliver addresses.

There will also be an afternoon session in the hotel parlors at which papers of interest will be read and discussed.

This is a new departure and will give any one interested in the mysteries of the plating art a chance to bring up any problem they are interested in.

Manufacturers and dealers in plating supplies and equipment should reserve space in the booklet which will be distributed on this occasion, space being $10.00 per page.

Tickets for the banquet and space for the booklet can be obtained from Mr. John Burke, 110 Glen St., Brooklyn, N. Y., secretary of the branch, or from members of the society.

WILLIAM FISCHER,
Chairman Banquet Committee.